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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,888	01/07/2002	Bill M. Culbertson	22727/04083	8873

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CLEVELAND, OH 44114

EXAMINER

YOON, TAE H

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 08/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/040,888

Applicant(s)

CULBERTSON ET AL.

Examiner

Tae H. Yoon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2005.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 37-55 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 37-55 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 37, 38, 40 and 41 are rejected 35 U.S.C. 102(b) as anticipated by Denzinger et al (US 5,175,361).

The instant terpolymer is taught at table, col. 6, example 24 of Denzinger et al. Thus, the instant invention lacks novelty.

Claims 37-41, 43 and 48-54 are rejected under 35 U.S.C. 103(a) as obvious over Xie et al (J.M.S.-Pure. Appl. Chem., A35 (4), pp 547-561 (1998) or Culbertson et al (ACS Symposium Series, 755, 2000, pp. 222-232) in view of Culbertson et al (US 5,369,142).

Xie et al and Culbertson et al (ACS Symposium) teach a polymer from acrylic acid, itaconic acid and N-vinyl-2-pyrrolidone and glass-ionomer dental restorative compositions thereof as discussed in previous office action.

The instant invention further recites the use of maleic acid instead of itaconic acid over Xie et al and Culbertson et al (ACS Symposium). However, the use of said maleic

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acid in copolymers for dental composition is well known practice as taught by Culbertson et al (col. 4, line 25).

It would have been obvious to one skilled in the art at the time of invention to utilize maleic acid instead of itaconic acid taught by Culbertson et al in Xie et al or Culbertson et al (ACS Symposium) since Xie et al and Culbertson et al (ACS Symposium) teach the use of itaconic acid and since the use of said maleic acid in copolymers for dental composition is well known practice as taught by Culbertson et al absent showing otherwise.

Claims 37-55 are rejected under 35 U.S.C. 103(a) as obvious over Xie et al (J.M.S.-Pure. Appl. Chem., A35 (10), pp 1631-1650 (1998) in view of Culbertson et al (US 5,369,142).

Xie et al teach a polymer from acrylic acid, itaconic acid and N-vinyl-2-pyrrolidone and light curable glass-ionomer dental restorative compositions thereof as discussed in previous office action. Xie et al (page 1636, Results and Discussion and Figure 2) teach grafting of 2-isocyanatoethyl methacrylate on carboxylic acid groups of copolymers.

The instant invention further recites the use of maleic acid instead of itaconic acid over Xie et al. However, the use of said maleic acid in copolymers for dental composition is well known practice as taught by Culbertson et al (col. 4, line 25).

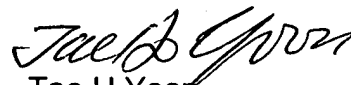
It would have been obvious to one skilled in the art at the time of invention to utilize maleic acid instead of itaconic acid taught by Culbertson et al in Xie et al since

Xie et al teach the use of itaconic acid and since the use of said maleic acid in copolymers for dental composition is well known practice as taught by Culbertson et al absent showing otherwise.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tae H. Yoon whose telephone number is (571) 272-1128. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Tae H Yoon  
Primary Examiner  
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August 1, 2005